Lake Union Seaplane Operations

General Historical Use and Background Information

Seaplane operations on Lake Union can be traced back to the maiden flight of the Boeing and Westervelt seaplane from the foot of Roanoke Street on Lake Union on June 29, 1916. In 1919 Lake Union was also the takeoff location for the first international air mail flight (to Victoria, B.C.) Commercial seaplane operations were established on the lake in the 1920's by Gorst Aviation and later in 1935 by Lana Kurtzer in the southwest corner of Lake Union.

In the mid 1980's Lake Union was home for five commercial seaplane operators: ***Otter Air*** with scheduled service between Lake Union and Victoria, B.C. with 3 aircraft; ***Kenmore Air*** located in the 700 block on Westlake Ave with scheduled service to the San Juan's and charter service throughout the Puget Sound and B.C. region; ***Chrystler Air*** with 3 based aircraft conducting commercial charters, scenic flights and instruction; ***Lake Union Air*** with 10 aircraft conducting charters, scheduled service to the San Juan's and Victoria; ***Kurtzer Flying Service*** with 4 aircraft offering instruction and charters.

Today, in 2005 there are two existing commercial seaplane operators on Lake Union; **Seattle Seaplanes** (the former Chrystler Air) and **Kenmore Air.**

History of Kenmore Air on Lake Union

Kenmore Air has always maintained its primary base of operations on Lake Washington in Kenmore. Seaplane operations however, have been conducted from Lake Union since the company's inception in 1946. For the period, ending sometime in the late 60's early 70's Kenmore operated primarily from the seaplane floats owned by Lana Kurtzer, or the former Lake Union Air at the southwest corner of Lake Union. In the early 70's Kenmore leased facilities on a permanent year round basis from a number of marina's along Westlake Avenue. At one point Kenmore held a lease for a two-year period at the Lake Union Drydock facility on Eastlake Avenue. The level of Kenmore Air operations on Lake Union in the 70's and 80's varied from year to year. For a near two-decade period Kenmore operated daily contract work for the University of Washington's Applied Physics Laboratory located on Portage Bay. This contract work was in addition to an active charter business based off of Lake Union. In the late 80's Kenmore purchased Otter Air and operated a turbine multi-engine Twin Otter and other aircraft in scheduled service between Lake Union and Victoria. Kenmore later moved to the 700 block of Westlake Ave and operated scheduled commuter service to the San Juan Islands. In January of 1993, Kenmore purchased the assets, routes and some property from Lake Union Air at the 950 Westlake Ave site. Kenmore has conducted all of its Lake Union flights from this facility since that time.

Operations and aircraft. A review of Lake Union operations counts submitted to the Washington State Department of Transportation-Aeronautics Division over the last ten-year period shows little change. These are estimates submitted by the individual operators. While the overall operations counts today are surmised to be less than when all 5 seaplane companies existed together on Lake Union in the mid 1980's, it is likely that operations from Kenmore and Seattle Seaplanes combined have increased slightly over the last five year period. The number of based aircraft however, has dropped dramatically from that of the mid to late 1980's when all 5 commercial seaplane operators flew from the lake. Today Seattle Seaplanes operates 2-3 aircraft and Kenmore may have as many as 10 aircraft on the lake at any given time during the busier summer months. Note that Kenmore does not base any aircraft at the Lake Union seaplane facility. All aircraft return each evening to Kenmore for maintenance and storage. Today, Kenmore estimates that it is responsible for approximately 25,700 operations annually on Lake Union. General Aviation (Seattle Seaplanes and Itinerant private and commercial seaplane operators) may account for an additional 7,000 annual operations for a total of 33,000 plus.

Operations Forecast: Kenmore anticipates only a small increase in the number of future annual operations. Kenmore does not anticipate that operations will increase more than 1%-2% per year over the course of the next 5 years.

Number and Type of Aircraft operated from Lake Union: In the mid 1980's there were as many as 28 plus aircraft based on the lake. With the brief exception of one turbine twin otter operated by Kenmore Air for a 12-month period in the late 1980's, a twin otter operated by Lake Union Air for two years and a turbo-prop Cessna Caravan operated by Chryster Air for two years, all aircraft were single-engine piston powered seaplanes. They included a large number of two bladed 5 passenger Cessna 206 seaplanes and several 6 passenger 2 bladed De havilland Beavers. Assuming that Kenmore bases 10 aircraft on the lake during busy summer days then the total of all based aircraft on the lake today is no more than 13. Kenmore's fleet of single-engine aircraft includes a mix of turbine and piston aircraft all of which are equipped with the quieter 3 bladed propellers. (See Noise Abatement)

Flight Schedules: Kenmore's daily domestic and international flight schedules vary on a seasonal basis. Between May and October of each year Kenmore offers 6 daily flights each to the San Juan Islands and Victoria, B.C.. Additional scheduled flights depart Lake Union daily to the Canadian Gulf Islands and other B.C. destinations. Kenmore also offers a fixed schedule for local scenic flights-generally no more than three scheduled flight times per day. Each single flight on Kenmore's flight schedule often requires more than one aircraft. In addition to the published schedule Kenmore conducts a considerable number of air taxi or charter flights, many of which also require multiple aircraft. As a general rule Kenmore's daily flight activity is conducted in waves of flights. Beginning at 8:00

am weekdays, as many as ten or more aircraft will depart the lake, all returning two hours later within a 30-minute window. Within an hour another group of aircraft depart and return again two hours later. (See flight schedule) All of Kenmore's flights are supported by free ground shuttle service between Lake Union and SeaTac airport. Approximately 75,000 of the airline's total of 150,000 annual passengers either arrives or departs from Kenmore's Lake Union terminal. While a strong component of Kenmore's passenger base is tourism that draws thousands of out-of state visitors annually to fly to one or more of Kenmore's waterside destinations, a large number are local residents that commute to work, school, or home on a regular basis.

Flight Times: Kenmore conducts all flight operations on Lake Union in accordance with a voluntary noise curfew. Flights depart Lake Union no earlier than 8:00 am weekdays and 9:00 am weekends and major holidays. Kenmore does not conduct nighttime operations on Lake Union.

Kenmore Air Facility: The Kenmore Air seaplane facility located at 950 Westlake Ave North is zoned for commercial uses under 004.J.8 as a water based airport. It is a privately owned-public use airport. The facility is actually comprised of three separately owned properties. A number of easements are in place that allows each property owner access without compromising the utility of seaplane operations at the site. Kenmore owns 12,078 sf of dry and submerged land that is contiguous with 7,297 sf of submerged land area owned by MLU, Inc. Vulcan owns 18,074 sf of combined dry and submerged land area adjacent to Kenmore's property to the south that is leased to Kenmore Air and used primarily for customer parking. The Kenmore owned parcel includes a passenger terminal, which houses a customs inspection area, passenger check-in and waiting area, two restrooms, pilot and staff break room and reservations/administration room. Two underground fuel storage tanks for Jet and Av Gas are located on the Kenmore property. Fuel is dispensed to aircraft at two fueling stations on the longer east/west seaplane dock. Fuel sales are not offered by the airline to other commercial or private seaplanes at the Lake Union facility except in emergencies.

Facility Access: Kenmore provides free van and bus shuttle service to and from SeaTac airport for a large portion of passengers. Additionally, passengers arrive at the Lake Union terminal by taxi from the adjacent downtown area hotels. A smaller number arrive by car and park in Kenmore's parking lot (the property leased from Vulcan), utilize existing free parking along the street in front of the terminal or pay for parking at the AGC parking lot adjacent to the terminal to the north. A number of passengers also are dropped off by private vehicle. Public transportation options are rarely used.

U.S. Port of Entry

Kenmore's Lake Union seaplane facility is the site of the only designated U.S. International Port of Entry for Customs and Immigration for seaplanes in the Seattle metropolitan area. (Note: Seaplane customs ports at Kenmore and Renton airports are designated "Landing Rights", not International Ports of Entry and have lessor regulatory and congressional status than the Lake Union facility.) As an International Port of Entry, Kenmore Air is required to provide itinerant private and commercial seaplanes a location for inspection by the Bureau of Customs and Border Protection for international arrivals.

Runway

Lake Union provides an approximate length of one and a half statute miles (7920 feet and 580 acres of unobstructed navigable surface area to safely conduct floatplane takeoff and landing operations. Floatplane pilots assess the desired landing zone while on approach to determine a safe and suitable space to touch down prior to landing. Assessment of the desired take-off area is also necessary to make sure that the space required for lift off and climb-out is free and clear of watercraft. To take advantage of prevailing winds, the runway area is oriented from north to south. It is the exception when winds are not aligned with this north-south direction. Given a lake that is entirely free of vessel traffic, seaplanes will generally land along or near the center axis of the lake. Existing boat traffic may, however, require the pilots to alter takeoff or landing to one side or the other. Most federal and state airport directories identify the runway on Lake Union as 18-36 at 9500 feet in length and 300 in width or runway 16-34 at 5000 feet length and 500 feet in width. Approaches to land to the south generally occur on a 20 to 1 approach slope with final approach taking place over the I-5 or Aurora bridges. Approaches to land to the north with final approach over the buildings lining the southern edge of Lake Union often use an approach path steeper than 20 to 1 which allows for a landing approximately one-third to one-half of the distance between the south end and Gasworks Park. Under most conditions Kenmore's aircraft will position themselves on short final so as to have a horizontal "obstacle free" area encompassing at least 100 feet to each side of the touch down and roll out path.

Noise Abatement Practices

Kenmore took the industry lead on establishing a program of seaplane noise abatement practices in the late 1970's. The program consisted of three parts: First, the development of quieter seaplanes. Kenmore made substantial financial investment in developing a retrofitted three bladed propeller for the most common seaplanes in operation-namely the Dehavilland Beaver and Cessna 180 and 185 models. The three bladed propellers were in operation on all Kenmore aircraft by the early 1980's and were later adopted by the other operators in the later part of the 1980's and early 90's. The three bladed propeller became a requirement or standard by Seattle DCLU in the permitting of future water based

facilities. This retrofitted propeller reduced perceived noise levels by 50% (studies conducted by independent contractor and verified by Mr. Curt Horner, Noise Coordinator, City of Seattle, Health Department) Additionally, beginning in the late 1980's Kenmore undertook the very costly expense of retrofitting it's fleet with turbine engines. This multi-million dollar investment continues today and now accounts for 40% of the total number of aircraft and 54% of the total number of available aircraft passenger seats flown by Kenmore. The turbine-powered seaplanes used by Kenmore reduce noise levels by another 50 percent. These aircraft are among the very quietest land and sea general aviation aircraft in existence today. No other commercial operator in the Seattle metropolitan area operates these quieter turbine aircraft at this time. Secondly, beginning in the mid 1980's Kenmore engaged the city and communities surrounding Lake Union in an active dialog concerning seaplane noise impacts, Although Kenmore Air was not the predominant seaplane operator on the Lake at that time it still took the lead role in negotiating noise abatement issues with the city and community. With five commercial seaplane companies operating 28 aircraft, most of which had 2 bladed propellers capable of generating single event noise levels in excess of 100 decibels on takeoff, the communities surrounding Lake Union needed some relief. Discussions led to the establishment of a permanent seaplane noise abatement committee chaired by the City of Seattle that lasted for several years and the eventual acceptance of a formalized seaplane noise abatement program and document that was signed by all the seaplane operators and neighborhood organizations surrounding Lake Union. The voluntary agreement specified flight patterns and voluntary noise curfews. Kenmore received a commendation from Seattle's Mayor Royer for its role in working with the local communities towards this agreement. (See agreement) Third and last, Kenmore maintains a highly structured noise abatement training program for its pilots. Pilot written exams, flight training and annual flight testing all contain a significant component of noise abatement practice. The attached written summary, which outlines the company approved flight patterns into and out of the lake, is only one example of the program and only one place where noise abatement procedures are found in writing within the company's flight department. Kenmore also devotes a large portion of its annual pilot recurrent ground-training program to addressing noise issues including any concerns expressed by telephone complaint to the airline's Chief Pilot or Director of Operations. When proposed changes to Kenmore's established flight patterns and altitudes around Lake Union are determined to not create new adverse impacts then Kenmore alters its operation, whenever possible, to mitigate any new or ongoing concerns. Kenmore also readily accepts opportunities to share its program and hear of new concerns from any of the communities it flies over as it conducts its daily domestic and international air service. Kenmore is often sought after by various public and government entities for assistance in establishing similar programs or understanding seaplane noise abatement issues. Most recently, in 2005, Kenmore performed a seaplane noise demonstration with several different aircraft models and conducted a presentation of seaplane noise information for the Renton city council.